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The Public Health Journal

The Official Organ of the Canadian Public Health Association.

The Control of Venereal Diseases
Gordon Bates, M. D.

The Venereal Disease Campaign in New York City
Louis Chargin, M. D.

The Church and Sanitation
Geo. G. Melvin, M. D.

Canadian Public Health Association

Vital Statistics
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Vol. VIII

No. 8

The Sixth Annual Congress of the Canadian Public Health Association, Ottawa, September 27th and 28th, 1917. Canadian Association for the Prevention of Tuberculosis, Ottawa, September 26th.

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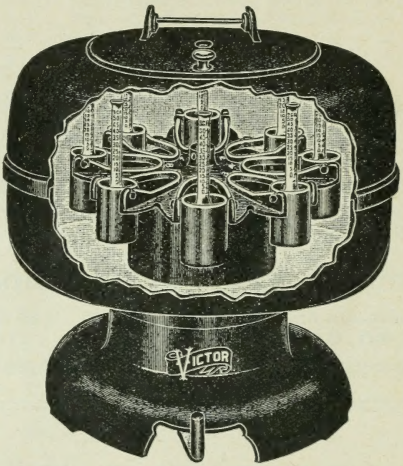

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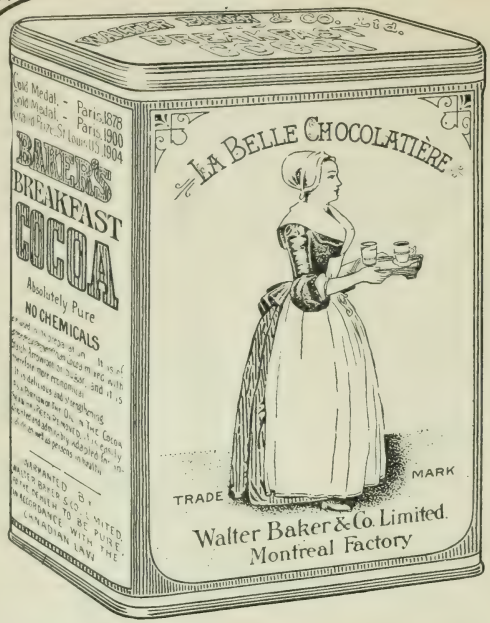

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The Public Health Journal

VOL. VIII. TORONTO, CANADA, AUGUST, 1917. NO. 8

The Control of Venereal Diseases*

By Gordon Bates

Capt. C.A.M.C., Officer in Charge Venereal Sect.
Base Hospital, Toronto.

THE question of the control of venereal disease is so large that it is difficult to attempt to deal with it in a brief paper. One may roughly resolve it into two topics, namely, the control of prostitution, and the control of venereal disease itself. Both of these are perfectly legitimate public health fields.

One cannot but feel that in regard to these subjects we are hampered by our ignorance of both their extent and seriousness. I am unable to find any extensive Canadian statistics as to the prevalence of prostitution, and only lately has the work of a few investigators using the Wassermann reaction given us the idea that in dealing with venereal diseases we are attempting to solve a problem of extreme gravity.

With the idea of arriving at some conception of the sort of situation before us, we have lately instituted at the Base Hospital in addition to a medical case sheet a social case sheet for the investigation of venereal cases. It is obvious that if we are ever going to deal with these subjects as questions of public significance of the same variety as poverty, child-labor or any other cause of disease, inefficiency or social misery of any sort, some such method of obtaining exact information must be undertaken.

Since this method of history taking has only commenced, I am only able to report the result of the examination of 100 cases. Since, however, venereal admissions to the Base Hospital are approximately 1,500 yearly, probably a more comprehensive report will be possible next year. The method of case-taking is simply to ask each venereally infected man a definite series of questions in regard to matters in connection with his infection which are felt to be significant.

Briefly our results are as follows:

89 men were infected through illicit sexual intercourse.

11 men were apparently infected by their wives.

59 infections took place in Toronto.

30 infections took place outside.

The outside places included Hamilton, Brantford, St. Catharines, Orillia, Barrie, Collingwood, London, Montreal, and a number of smaller places.

With the idea of obtaining the co-operation of the police or other authorities, the exact name and address of the woman acting as a source of infection was asked and in not a few cases obtained.

*Read before the Ontario Health Officers' Conference, May 29th, 1917.

The following details as to payment rendered were secured:

42 men paid actual cash. The amount varied from $1.00 to $15.00. The usual price was $2.00.

18 men provided a meal as payment. The price of this varied from 50 cents to $5.00.

2 men made presents of clothes or other articles.

22 men paid nothing whatever.

Among 93 women from whom infection was contracted, the age varied from 16 to 34.

17 women were estimated to be 18 years of age.

70 were between the ages of 18 and 25.

In 16 cases (in spite of prohibition) either one or both parties had indulged in alcohol.

Place of Infection

In 9 cases infection had taken place definitely in a house of prostitution. In only two instances was this true in Toronto.

In 31 cases the men had gone home to the girls' boarding houses.

In 30 cases infection had taken place outside.

In 12 cases the man and woman had gone to a hotel and registered as man and wife.

In 20 cases they had gone to strange rooming houses.

Occupation of Woman

An attempt was made to find the occupation of the infecting woman. This was difficult, as in many cases no information regarding occupation was forthcoming.

41 had gainful occupations or means of support in addition to prostitution.

9 were definitely prostitutes.

In 39 cases no information could be obtained.

64 women were single.

1 was a widow.

7 were married.

21 unknown.

As to the married or single state of the infected men we have no record, as it was felt that the fact that enlisted men are a special class, would impair the value of such a record.

So much for the information obtained from the social case sheets. As to the amount of venereal disease in the community—rural and urban Ontario—we can only guess.

As I have said, the admissions at the Base Hospital are approximately 1,500 per year. In Toronto General Hospital, Wassermanns done by Dr. Detweiler, prove that for the first three months of 1917, 12 per cent. of all public ward patients gave a positive Wassermann reaction. By such means 238 new syphilitic cases were discovered. This is at the rate of 952 cases yearly. I need not remind you in this connection that gonorrhoea is perhaps six times as prevalent as syphilis.

Questions one is inclined to ask oneself are these: If in one general hospital nearly 1,000 syphilitics (2/3 of them previously undiagnosed) are discovered in a year, how many (treated and untreated) are there in the community outside the hospital?

If in a military district through which troops are passing, and in which the average number of troops is certainly less than 10,000, 1,500 venereal cases (mostly fresh) arise—again in what state of health so far as venereal diseases are concerned, is the community at large?

1,500 soldiers infected means approximately 1,500 women from whom they received their infection and in dealing with soldiers we are dealing only with one class of the males. We cannot doubt that similar conditions exist elsewhere.

The medical results of such conditions are found in the fact that 25 per cent. of the male admissions to Toronto Hospital for the Insane, in a year, are suffering from general paresis, and in the large number of other final results of gonorrhoea and syphilis which play a large part in keeping up the population of our hospitals and asylums. I need not go into that subject on this occasion. The social results connected with the expense of disease, the death or incapacity of the bread-winners of families, these results are just as serious. The question for us

to face is whether we are going to permit this condition of affairs to continue when it is possible to eradicate venereal diseases just as it is possible to stamp out typhoid fever or malaria.

As to the means to be adopted I would suggest first a broad and energetic scheme of public education. Lectures, pamphlets, moving-pictures—anything is commendable which will destroy the ostrich-like attitude of the public and even many physicians—the attitude which is exemplified by the fact that it is impossible to show either the dramatic or film version of "Damaged Goods" in Ontario.

Some system of investigation of the sordid facts of prostitution in our midst would be of value if widely adopted, but the facts should be given wide publicity. The truth in regard to venereal diseases will eventually rouse the public to a realization of the fact that low wages, the lonely boarding house, poor education and late marriage in men and women, are casual social factors which eventually they hold it in their power to remedy.

From the purely medical standpoint we must look forward to the time (I hope not far away) when the reporting of venereal disease is practicable. Both from the statistical standpoint and the standpoint of control this is important as in any other communicable disease. It will come when public education has advanced sufficiently.

Early and free diagnosis, especially the dark-field and the Wassermann reaction, should be possible for every patient and I am glad to know that within the past few weeks the Provincial Board of Health has arranged for free Wassermanns in Ontario. The free treatment of all venereal disease should also be available, and it should be possible to isolate or quarantine infective cases which refuse treatment.

The issuing of instruction cards to all patients, laws against the treatment of venereal disease by quacks or druggists, and the elimination of newspaper advertising by so-called specialists, better control of the feeble-minded, and because it is practicable, treatment of all infected soldiers before they are discharged from the army, seem to be problems immediately before us. These and others are no less capable of solution because they are new or less worthy because their solving means so great an advance in the health and welfare of the community at large.

The Venereal Disease Campaign in N.Y. City

By Louis Chargin, M.D.,
Superintendent Division of Venereal Diseases, Department of Health, City of New York

IT has been tersely stated that "syphilis constitutes a third of pathology and that gonorrhoea is responsible for nearly one-half of gynocology," and but a moment's reflection will suffice to impress one with the enormity and gravity of the venereal problem. Little wonder, then, that communities have awakened to a realization of the importance of combative measures. There hardly can be a period in human progress, when diseases so inimical to the health of a people should have failed to call forth defensive measures and indeed an examination shows the literature to contain many references to attempts aimed at control that go back to the earliest times. It was not, however, until within a comparatively recent period that more or less systematic measures were undertaken. Italy and France, in the eighteenth century, and England, in the nineteenth century enacted legislation which dealt with the problem. Such legislation was based upon the assumption that prostitution is the chief factor in the spread and incidence of the diseases and, accordingly, the measures were limited to the registration, examination and segregation of prostitutes. It has been amply demonstrated wherever attempted, how inadequate.—in fact, futile, has been the attack from this standpoint. This has been true, principally, because it dealt with but a fraction of the sources of infection, since neither the clandestine prostitute nor the infected male were considered in this plan.

To the Scandinavian countries is due the credit of first introducing—during the last quarter of the twentieth century—modern and comprehensive legislation. It is this legislation which forms the model upon which the most progressive measures, those of Australia and New Zealand, have been based.

Before considering the control of the venereal diseases as undertaken in New York City, it would be well to touch upon the principles that are recognized in dealing with infectious diseases in general. Pusey has recently summarized them as follows:

1. Control of the routes of communication.

2. Restraining the liberty of the infected person until the danger has passed; in other words, quarantine.

3. Control of the infectious disease as quickly as possible. To which should be added—

4. Educational measures.

Admitting, as the majority of sanitarians now do, that syphilis and gonorrhea may be properly classed with the infectious diseases, how far can the above named principles be applied to venereal diseases?

In order to control the avenues of communication in venereal diseases it is necessary to quarantine all the infected individuals until they are no longer a menace. Granting that facilities did exist, it is obvious that this would hardly be feasible even with a portion of the cases, when it is remembered how widely disseminated and chronic these diseases are. That, to a certain extent, it can be practiced is true, but such facilities should be reserved for the most actively contagious cases. It is clear that the two principles, namely, the control of the routes of communication and quarantine, can have but limited application. We are compelled, consequently, to fall back upon the last two propositions which, while they may not serve to completely eradicate venereal disease, nevertheless will control them to a great extent, especially when we bear in mind how well-fortified we are from a therapeutic standpoint. The success of the control of these diseases from this standpoint necessarily promises the prompt recognition of the diseases and

also the immediate application of proper and adequate treatment. This can be effectively done only where registration of all cases is practiced.

Recognizing that progress in this field will have to follow the above outlined principles, the Department of Health of the City of New York has directed its attack from this angle, and accordingly requires the registration of all cases; active measures to make treatment of the infected available and accessible to all, have been undertaken and the department has inaugurated educational propaganda, to reach both the profession and public.

The preliminary step toward administrative control in Greater New York was taken by the Board of Health early in 1911, when it was resolved, "That the protection of the public health requires the early adoption of means for the sanitary control of venereal diseases." Later in the same year, a communication from the then medical officer, Dr. Hermann M. Biggs, now State Commissioner of Health (to whom in a large measure belongs the credit of introducing this work in New York), detailed more fully the necessity for action, with the result that the board of health, sanctioned by the advisory council, adopted a set of resolutions, effective May 20, 1912. The sense of these resolutions is embodied in section 88 of the Sanitary Code of 1916, which is at present in force and which reads:

"Duty of superintendents of hospitals and dispensaries, and of physicians, to report cases of venereal diseases. It shall be the duty of the manager, superintendent, or person in charge, of any correctional institution and of every public or private hospital, dispensary, clinic, asylum or charitable institution in the City of New York, to report promptly to the Department of Health the name or initial, together with sex, age, marital state and address, of every occupant or inmate thereof or person treated therein affected with syphilis or gonorrhoea; and it shall also be the duty of every physician in the said city to promptly make a similar report to the Department of Health relative to any person found by such physician to be affected with syphilis or gonorrhoea. All reports made in accordance with the provisions of this section, and all records of clinical or laboratory examinations indicating the presence of syphilis or gonorrhoea, shall be regarded as confidential, and shall not be open to inspection by the public or by any person other than the official custodian of such reports or records in the Department of Health, the Commissioner of Health, and such other persons as may be authorized by law to inspect such reports or records nor shall the custodian of any such reports or records, the said Commissioner of Health, or any such other person divulge any part of any such report or record so as to disclose the identity of the person to whom it relates."

It will at once strike the reader that the provision does not require the reporting of the full name of those infected, this being left to the discretion of the physician, and it may be asked, with justice, what, if any, purpose such records can serve? In the first place, it is hoped, by this means to get an approximate estimate of the number of cases developing in the city in order to determine the magnitude of the problem, and, secondly, the Department, fully recognizing that it likely would meet with opposition at the outset, considered the compulsory notification of the full name inadvisable, especially in view of the fact that home supervision by the Department at this time is considered inexpedient. Frankly, the Department only sought to make an entering wedge,—that is, to get the profession in the habit of reporting these cases. In the meantime, it is hoped, by education, to induce the public and profession to view the venereal diseases exactly as it does any other group of infectious diseases, all of which are now reportable and dealt with in the open.

With reference to compulsory notification, it may be well to point out that though the British Royal Commission, in their recent report, advised against such notification for the present, they recognized it in principle, and looks forward to its introduction in the near future. Furthermore, competent German opinion favors this step, as will be noted from the recent report of the "Muenchener Aertzliche Verein." We were confronted with

a similar situation at the inception of the Department's tuberculosis campaign. When the Department adopted the regulation requiring the reporting of tuberculosis, medical societies condemned the Department's attitude, but long since that opposition has ceased.

It should be noted that ample provision is made, by definite statement in the code, to safeguard the secrecy by these records; and it goes without saying that these are strictly adhered to. The records are not accessible, except as legally provided for.

Convinced that laboratory facilities constitute a most important factor in diagnosis and as a guide to treatment in the venereal diseases and recognizing the necessity of placing such facilities at the disposal of the profession for the benefit of all, the Department has freely extended the use of its laboratory for this purpose. Accordingly, we perform all tests and examinations in connection with venereal diseases. These are made upon request of physicians and hospitals to whom report are returned. No charge is made for the service. Diagnostic outfits for the Wassermann and complement fixation for gonorrhea, slides for smears, etc., are distributed to some 500 stations throughout the city, from which centres they are daily collected and conveyed to the Department laboratory for examination. The facilities are extensively made use of, as may be judged from a comparison of the number of specimens examined since the introduction of this work.

Specimens Examined

1912	4,372
1913	22,276
1914	56,187
1915	65,683
1916	72,463

The sources from which most of our cases are now recorded are laboratories and institutions. Experience has demonstrated that physicians seldom report their cases in private practice. Less difficulty is found with reports from institutions. Institutions in the city are required to enter in an "Institution Journal," supplied for the purpose by the Department, all cases of venereal disease under their care. These records are copied by an inspector from time to time and transferred for filing to the venereal division. Insofar as reports from the laboratory are concerned, every blood test found to be two plus or over, is considered a positive case and is so recorded. An enveloped system of filing records is employed and cases reported in duplicate are filed with the original reports. A comparative table of the number of venereal disease cases reported and the sources of such reports since the inception of the work follows:

Year	Total number reported	Reported through laboratory	Reported by institutions (not through laboratory)	Reported by private physicians (not through laboratory)
		SYPHILIS		
1914	*21,155	13,870=65.5 p.c.	7,189=34.2 p.c.	96= .3 p.c.
1915	†17,336	14,258=82.2 p.c.	3,025=17.4 p.c.	53= .4 p.c.
1916	†20,429	15,166=75.3 p.c.	4,924=24.4 p.c.	39= .3 p.c.
		GONORRHEA		
1914	*10,907	3,480=31.8 p.c.	7,275=66.7 p.c.	152=1.5 p.c.
1915	† 9,708	2,618=26.9 p.c.	7,040=72.5 p.c.	50=0.6 p.c.
1916	† 6,341	2,600=41.0 p.c.	3,640=57.4 p.c.	101=1.6 p.c.

*Includes cases reported in duplicate.
†Excludes duplicate reports.

It will be noted that a large proportion of our cases were reported through the laboratory and we have no hesitation in saying that a considerable number of these would, in all probability, not have been recorded if laboratory facilities were

not offered. In other words, we feel that the laboratory is an important means of getting the cases on record. The physician, in forwarding specimens, is required to send in a history properly filled out, and, as already noted, in the event of the examination proving positive, this is considered equivalent to a report. We are aware that a proportion of the histories bear assumed names, but until Departmental home supervision is undertaken, no way of verifying or remedying this exists.

With a view of rendering the profession all possible aid in diagnosis, there have been established properly equipped and well-manned diagnostic clinics in the various boroughs of the city. At present, there are four in operation with morning and evening sessions. Two of these are located in Manhattan Borough and one each in Brooklyn and the Bronx. At these, blood is drawn for complement fixation tests and smears are made as the case may require on all patients referred by physicians and institutions. These clinics have been well received by the profession.

There has also been established medical advisors' clinics, diagnostic and educational in character, which act as a sort of clearing house for venereal disease. These clinics, located one each in Manhattan and Brooklyn are in charge of trained men. No treatment at all is undertaken, much to the disappointment of a large proportion of our clientele, who come with the expressed idea of receiving treatment.

Pamphlets and cards, written in simple language and giving the necessary information, are distributed. These are available in English, Italian and Yiddish. Cases that require treatment are referred, wherever possible, to their family physician and such as cannot afford the services of a private physician are referred to a group of accredited clinics most suitable to the applicant as to location and hours.

The clinics, in order to be placed upon the approved list, must comply with the regulations adopted by the association of out-patient clinics, which include such requirements as any well conducted and properly equipped clinic should possess. If, in the opinion of the examiner, the patient appears able to consult a private physician and the patient denies having any, the entire list of approved clinics is offered and advice given to make their own choice from among the staff connected with the clinics. Under no circumstances is the name of any physician given. The Department, furthermore, will not undertake to judge between one or another registered and ethical practitioner, requests for which frequently are made. Patients consulting us while under the care of a private practitioner are invariably referred back for further attention and such of the patients as plead inability to continue on account of the lack of funds, are required to furnish a note to this effect from their own physician before being referred to a clinic. It will be seen that every effort is made to safeguard the interest of the private physician.

During the year 1916, a total of 5,868 visits were made to the medical advisors' office, of which 3,728 were new cases and 2,140 revisits. Revisits are made necessary to ascertain results of blood tests and smears, a small proportion returning for the purpose of further advice. Of these, 3,514 were males and 214 females. This shows a slight increase in the percentage of women attending over the previous year. Our advertising agencies among women are still inadequate. Regarding marital condition, 873 were married and 2,855 were single; and here occasion is taken to state that for the most part infection among those married occurred during their single life. The nature of infection was diagnosed as follows:

Actual or suspected syphilis	998
Actual or suspected gonorrhea....	1,500
Sex and other neuroses	345
Diseases other than venereal	902

Statistics on sources of infection are so varied that it was thought of interest to tabulate and analyze the cases attending our clinic. These were divided into public and clandestine prostitute and other sources, including under the last heading such as were innocently acquired and congenital infection. Of our series 1,711 fell under the first heading, in 349

the clandestine prostitute was the source of infection and 101 fell under the last group. In other words, the public prostitute was responsible for infection in this group of cases in 80 per cent. of the individuals.

Every large city, and New York is no exception, is infested with a group of unscrupulous and obnoxious medical charlatans—the so-called advertising venereal disease specialists. We have tried to cope with this problem from various angles and are confident of eventually eradicating the evil. The quacks are not so numerous and, we have reason to believe, not so well patronized as formerly. One hardly need dilate upon their detestable practices. It is the foreign element upon which they prey, for the most part. The legislation on our statute books seems ample, yet it is difficult of application. It seems no easy matter to prove fraud and deceit. Their most important means of publicity, as is well known, is the advertisements in the public press, especially foreign newspapers, the posting of signs in toilets and exhibitions in privately controlled museums. On the principle of "Similia similibus curantur," we have sought to counter them with their own methods. In conjunction with the County Medical Society and the New York Social Hygiene Society, we have succeeded in closing up all but two anatomical museums in the city. The New York Social Hygiene Society, the Brooklyn Hospital Dispensary, with the assistance of the Department, have opened an educational ambulatory exhibit, which is, from time to time, removed to suitable centres, and in which educational pamphlets are distributed and advice and instruction given. This museum has proved a great success, 20,000 visits being recorded during the summer of 1916, when the exhibit was located in Coney Island, the popular New York City seaside resort. We have been running a four-line advertisement in a few of the newspapers that accept quack notices, which reads:

"Free advice regarding venereal diseases can be obtained at the Dept. of Health, 139 Centre Street, Room 207, from 9 a.m. to 12 daily. Sundays and holidays excepted. Consultation strictly confidential."

During 1916, 92 sought advice through this ad. We are glad to record that one of our big daily papers, at a great loss, has recently expunged all medical advertisements from its columns. This paper once served as one of their most important mediums of publicity.

Another agent which is proving of inestimable value is our venereal disease signs which we have had placed in toilets and on bulletin boards of railroad stations, terminals, factories, etc. Some three thousand have so far been posted. It reads:

VENEREAL DISEASES
CONFIDENTIAL ADVICE
REGARDING
GONORRHEA — SYPHILIS
AND
SEX DISEASES
CAN BE OBTAINED AT ROOM 207
THE DEPARTMENT OF HEALTH
139 CENTRE STREET
9 A. M. TO 12 M. DAILY
SUNDAYS AND HOLIDAYS
EXCEPTED
—AVOID—
ADVERTISING SPECIALISTS AND
PATENT MEDICINES

This is a very important source of our clientele, 1,727 individuals consulting us during 1916, in response to this sign.

While it is of course impossible in a large community like New York to hospitalize all venereal disease cases, it must be pointed out that for such as bear active lesions, especially among the ignorant and indifferent, the community will sooner or later be compelled to furnish ample hospital accommodation. We are glad to record that sufficient funds have been allowed for the construction of a pavilion for venereal disease, to house sixty patients. This hospital is about to be opened.

In addition, there are a little over four hundred beds available, scattered in the various other city and semi-private insti-

tutions. From this modest beginning it is hoped that authorities will see their way clear in the near future to grant sufficient funds for greatly increased accommodations.

It cannot be too strongly emphasized, however, that the venereal diseases are admirably suited for out-patient treatment, and all efforts should be made in developing these. A survey of the New York dispensaries for the treatment of these diseases unfortunately has demonstrated that but very few are properly equipped for modern treatment and diagnosis. Efforts are now being made to induce the responsible heads to improve these conditions, but we realize that it is a difficult problem which brings up many questions upon which we cannot enter here.

An important feature of the campaign is the question of home visits. Whatever the causes, it is well known that one of the greatest difficulties encountered in the clinic is to get regular and persistent attendance on the part of patients. The greater certainty with which cure may be looked forward to if cases are taken in hand early and treatment persisted in over a sufficiently long period, makes it desirable for exceptional efforts to be made to impress the patients with the importance of continued and prolonged attendance. It is clear that some follow-up system must form a part of a properly conducted clinic and at a meeting of the advisory committee on venereal diseases of the Advisory Council of the Department of Health, such action was strongly recommended as one of the requirements of approved clinics.

The salvarsan situation is no less important. Conscious of the fact that the large expense involved in the modern treatment of syphilis can hardly be borne by the average wage earner, and recognizing the benefits to the community in early and active treatment, the Advisory Council of the Department of Health at a meeting held March 8, 1917, adopted the following resolution:

Be it Resolved, That it is the sense of this Board that all dispensaries, otherwise complying with the requirements of the Board, regarding equipment, methods of diagnosis, treatment, and follow-up procedure, and many hospitals, should be provided, by the City of New York, with sufficient "Salvarsan," or proper subsidy in funds, for the immediate treatment of all persons ill of syphilis, who, upon investigation, are found to be financially unable to secure it.

A matter of the greatest moment which is receiving but little attention in our communities is the question of personal prophylaxis. Carefully controlled experiments have proved its reliability, and such failures as are recorded can be traced to improper or delayed application. Pusey states that its systematic use and its general adoption would undoubtedly cause a great diminution of the prevalence of disease and recommends that the matter of prophylaxis should become generally known. Unfortunately, we know of no reliable prophylactic package in use here. The Department is distinctly impressed with the benefits to be derived from personal prophylaxis and does not hesitate to go on record as favoring this means of venereal disease prevention.

In this city the educational feature of the campaign is still in its infancy. A large number of trained speakers is a requisite, and in this regard we are seriously handicapped. Nevertheless, with our limited facilities, and with the kind assistance of various agencies, lectures are delivered in the various social and civic centres, which, judging from the keen interest displayed and discussion aroused, are well received. Finally we must seek to arouse greater interest among the profession. Their co-operation is urgently needed; for after all, the majority of the infected, perhaps 70 per cent. of the total, are in its hands.

The Church and Sanitation*

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THOUGH not infrequently called upon to address mixed audiences upon matters relating to public health, it is only occasionally that I have the privilege and pleasure of coming before a purely professional company with this theme. And, that it is a privilege, cannot, I think, be gainsaid. As you very well know, a most marked, almost a fundamental, distinction exists between the lay world and that of the learned professions when the consideration of any subject is involved. With the one, concrete examples and illustrations are constantly necessary, if one is to impress himself upon his hearers, while with the other the abstract and the general are easily received and carry conviction, if they be founded upon truth. As I conceive it there is also another advantage—another freedom—in speaking to the clergy. At most times, on most subjects, one has to have many reserves, while striving to express what is in him, but before a profession, one of the prime functions of which is to understand human nature and to read the unexpressed word, such reserves are not only inexpedient but useless and foolish.

It is well, at the outset, that we should have a common understanding of the word "sanitation." It is really one of the broadest and most all-embracing terms of which we make ordinary use. It has to do with almost all the physical activities of life. Long before man is born he suffers or profits according as its laws are obeyed or disregarded in his immediate environment, and when even life has departed from him, it becomes a matter of surpassing importance in a sanitary way, that what remains of him is properly disposed of. The word sanitation has a number of practical synonyms. It is often referred to as the science of public health, as hygiene, or as preventive medicine. There are, perhaps, minute distinctions, established by convention, between these terms, but these distinctions, to our present purpose, are not material, and need not detain us. The term preventive medicine while very correct in a technical way, is liable to be, and is very commonly misunderstood. The science and art of medicine proper, concerns itself with the cure or alleviation of disease or injury in the individual, but preventive medicine, or sanitation, looks to the anticipation and avoidance of disease and physical discomfort, directing itself not so much to the individual as to groups of individuals, to communities and to whole nations. Now, as it is well known that it is much more of a task in practice to anticipate or prevent an evil, than it is to take steps to stop or modify it once it has occurred, it will be immediately seen how immensely more difficult is the problem that confronts the sanitarian than that with which the physician or surgeon grapples. Moreover, consider for a moment the difference in merit, in the public estimation, of one who, by foresight, prevents an evil from coming about, and one who, by skill, cures or abates the evil once it has happened. An occurrence which has been prevented, of course, never happens, and there is, generally, no evidence upon earth strong enough to prove beyond all doubt that it would have happened had it not been prevented. It is easy, then, to see how obvious and palpable are the claims to credit of him who cures a broken leg, compared with the apparently nebulous and uncertain merit of the one who asserts that he has prevented such an untoward happening.

But sanitation is not alone concerned with the merely negative side of things. Its aims are broader, higher and more ambitious than this. It strives by preventing or removing evil to do a positive good—a good, it is true, not generally achieved instantly, or that is strikingly apparent in individual cases, but a good

*Read before the Evangelical Alliance, St. John, N.B.

that is to be discerned over considerable areas, over groups, large or small, and after the lapse of considerable time. It is not necessary to say that such good is often not apparent to the ordinary onlooker, nothing is more common than to forget the "winter of our discontent" in the glorious summer following, and to look even upon the latter season as one never before equalled in its discomforts and disadvantages. It is but a short time since that I listened with great interest to a member of your profession, not of this city, recite a fervid oration upon the unspeakable slums of one of the largest cities of Canada, although such was not his ostensible subject. By one not informed, it would be taken for granted both by what he said and what he left unsaid, that nothing had been or was being done in that community in an official and authoritative way, to remedy these conditions. Yet that very city has the most modern and efficient public health system that exists in this country; it has cut its death-rate in half within a few years and now has one that is among the very lowest of the considerable cities of this continent; it has scores of faithful men and women enforcing its sanitary laws and constantly striving to better them, both in form and action; men and women—public officials—constantly protecting the health of its people, not in any sort of a "campaign" way, not actuated with an enthusiasm born over-night, but at all times and seasons, summer and winter, year in and year out. But no one that night, listening to the glowing and impassioned periods which fell in showers from the speaker, would have suspected this for a moment. Rather it would have been supposed that that unfortunate city was entirely given over to "pestilential vapors" and that there was but one alone left to lift up his voice and cry mightily for its deliverence. He enunciated what he appeared to regard as an altogether original discovery, viz., that the chief thing needed to abolish slums were "appropriate laws properly enforced." In this latter, of course, he was perfectly correct, although, after all, he was not quite the first one to perceive it. Ever since the time of Moses—not to go too far back—appropriate laws properly enforced has been the panacea of humanity for every kind of evil. It is not slums alone that such would abolish. An appropriate law, properly enforced, would stop the evil of lying, of slander, of war, of dishonest dealing, of an innumerable brood that continually wells up from the pit, and perhaps, also—a consummation devoutly to be wished—of misrepresentation and unfair criticism. It would, in a word, bring about the reign of righteousness wherein the "lion and the lamb" are so picturesquely concerned; or, perhaps I am putting the cart before the horse—indeed I am quite sure I am. Rather, that reign of righteousness will bring about such a law and such an enforcement, and, moreover, at the same time, render both law and enforcement unnecessary.

For although the evil of slums and insanitary housing displays itself upon the surface, its causes are not so superficial and are not to be easily swept away by the mere word of legislatures and the strenuous efforts of individuals, whether official or amateur. I hesitate to go into this matter, but in this place and before such hearers it would seem but in line with my duty to do so. I would not consciously belittle the effects of the law and of official effort; indeed, before I have done, I hope to show that almost incredible results have been had from these factors, but I would fain make it plain that causes deeper and more permanent than are generally looked for underlie the age-long curse of wretchedness and squalor. Poverty, that incentive to virtue in the mouth of the prosperous, and the mother of misery in the experience of the world is the first and fundamental basis of the slum. It is to sanitary living what an incoming rush of water into the hold, is to the ship. It is true we may put the pumps at work, and by much labor and constant endeavor keep the ship afloat, and even, now and then, cause her to rise and be more buoyant, yet all we can do is entirely artificial, enforced and evanescent, and let us relax our efforts but for a moment, the sinking recommences and the tendency to go to the bottom is never absent for an instant. At the very best, with poverty as our opponent,

our endeavors are but as the rolling of a large stone up a hill which, once it gets out of hand, may miserably crush us in its frightful relapse towards its original situation. I have no time, nor very likely the ability, to elaborate the evils of poverty or the causes of it. Like war, and like everything else in this sad world, it is not all evil; here and there are grains of virtue in its make-up, grains that are constantly germinating and from which a never-ending crop of the brightest, the best, and the most forceful of humanity is growing up. But these are exceptional instances, the result of the barbarous and unchristian law of the "survival of the fittest," a law which is no law, but an accidental outcome of vicious forces that have no more moral right to exist among mankind than had the ghouls and werewolves of our Germanic ancestors.

But you will tell us there are other causes than poverty for insanitary living. This I concede, but most of them when carefully considered are either the results of poverty or the origins of it. One of the latter is the almost universal belief that individuals have the right to possess, as private property, as much of the surface of the earth as they can secure and continue this possession to their children or heirs. I know very well that this is rank heresy in the political economy of to-day, and heresy of any kind should be particularly avoided under the peculiar conditions of this simple address. Yet I would beg you to remember what I have already said as to the throwing away of reserves upon the present occasion, and to hear me as charitably as possible. I am not about to give you a digest of Henry George's "Progress and Poverty," or indulge in any idealistic flights whereby the earth and the inhabitants thereof shall be renovated the day after to-morrow. I only wish, as a layman and a sinner in this very matter of holding land as though I had a right to do so, to make my humble confession to you, and to tell you how sorry I am for this particular misdeed, and—nevertheless—continue to hold on to it. Of course there are many other causes of slums and insanitary living, but, with one or two exceptions, they are all corollaries of poverty, without which they would not exist. Old and broken-down houses are generally synonymous with slums, though this is by no means always the case. I have seen dwelling apartments in half-ruinous houses that by no possibility could be called slums. They were tidy, clean, well-kept, with every advantage taken to combat and overcome as far as possible, the unfavorable conditions surrounding them. On the other hand, slums and unwholesome living are sometimes met with in fairly well constructed buildings. Both of these types are representative of another element making for slums, or in the opposite direction, quite apart from the question of penury and want. They bring in the personal factor, the spiritual element, as it were, as contrasted with the material or physical, in the art of living. I shall revert to this a little later on. Broken-down houses mean cheap rents, and cheap rents are a necessity of the poor. But cheap rents, like cheap food, cheap clothing, cheap medicines, and every other of life's necessaries, are dear at any price, when cheapness means a lower price than that at which fairly good articles can be supplied, and yield a usury of misery and degradation far surpassing the normal which nature demands. Here, again, private sovereignty in landed property exercises its baneful influence, which, so long as it exists, only the highest strains of charity, compassion and philanthropy in both state and individual can in any degree relieve.

In many instances it is as impossible, or at any rate, impracticable, to make a worn-out house decently habitable, as it is to put new life into an old and broken-down work animal. Indeed, the inference seems irresistible that, as we insist upon such animals being destroyed, so also, should a house, once it assumes an irretrievable phase of decay, be done away with, and be known no more for ever. Improvement put upon such places, often at the behest of authority, wither, like the gourd of Jonah, over-night. It is, in a most marked way, the putting of new wine into old bottles. The result is a rupture, often in a very literal sense. Sanitary arrangements installed in the summer freeze up in the winter, entail-

ing a depth still deeper than the original one. And this not always because of the imperfect fabric of the house, but of the utter inability of its occupants to provide fuel enough to resist a low temperature. Here, again, that grisly "guardian of the threshold"—poverty—(an allusion which you who have read Lytton's "Zanoni" will understand) comes in. For zero weather is no respecter of persons. It has ruth for neither the humble nor exalted, for neither the palace nor the pen. Each, by artificial means, must protect himself and his environments against it, and artificial means mean coal, and coal is gradually and slowly assuming the character of precious metal—a pearl, indeed—of great price. Some sixty years ago, a large lump of this mineral, placed in the first great London exhibition was labelled "the black diamond," and the whole world smiled at the extravagant and clever conceit. But we are no longer inclined to do so. We are beginning to regard the originator of that name in the light of a prophet, and to associate the expression "black diamond" with painful anticipations.

Want of knowledge, again, sometimes a by-product of poverty and sometimes not, is another large element in wrong living conditions. So far as habitations are concerned, almost everything, in a sanitary way, depends upon two most simple, straightforward and, it would seem, obvious factors—dryness and ventilation. Of these two I do not hesitate to say that dryness is by far the first in practical importance. But dryness in a house means drainage and protection from the ground-air and water. Yet many houses are being constantly built with, seemingly, never a thought of this absolutely indispensable condition. They have been and are being constructed in locations where drainage is either absolutely impossible, or where it is so difficult and costly, as to make it impracticable to the individual or the corporate community. Without protection against dampness, all else goes for nothing. Dryness and fresh air are the inveterate foes of almost all forms of diseases, even senile decay, and the habitation, though a mere shack, that possesses them is a very Eldorado compared with a palace whose foundations reek with moisture, and whose walls exude sweat. Unlike the agriculturist, therefore, and his blades of grass, the one who causes a house to grow where no house should grow, is no friend either of himself or of the community.

There is no end to the list of contributory causes of insanitary living. Undue love of gain, though in this connection not one whit more culpable or more pronounced than in any other commercial enterprise, thoughtlessness, absentee landlordism, wilful neglect, and strangest of all, absolute poverty on the part of the owner, help to make up the sinister list, and cause some of us who know, and whose work it is to try to mend matters, to sometimes wring our hands in despair.

A page or two back I adverted to a cause of poor living that, of itself, may not be necessarily or directly connected with penury. I mean the personal element—the character of the householder himself—his industry, his ambition, his love of order, of cleanliness, of attention to detail—in a word, his house-keeping. Insanitary living does not necessarily exist, except in instances of the deepest poverty, or accident, or overwhelming sickness, where a knowledge of how to live aright and a determination to rise superior to circumstances actuate the householder. And it is just here, in the absence of such knowledge and determination, that the church, and by that I mean in an especial way, the clergy, may effect marvels. Without the remotest doubt, law and authority may, and do, greatly mitigate the evil of ruinous dwellings, of bad or worn-out plumbing, of inadequate drainage. But no law or official since the world began, has, with any degree of permanent success, enforced personal or house-wifely cleanliness. As well might an attempt be made, through the terrors of fine and imprisonment to regulate the taste in food or drink, the opinion of the weather, or the daily prayers. Education and example alone are here capable of effecting improvement, and who so effective for this purpose as the recognized teachers of a creed in which it is acknowledged that "cleanliness is next to godliness?" The very

author of that aphorism was a pronounced and practical sanitarian himself, though probably hardly ever having the word sanitation on his lips or definitely in his thoughts. By raising the ambition of the Cornish miner above the daily dull grind of sleep and work and drink, by giving them a certain degree of culture really inseparable from a true conception of the theory and practice of Christianity, he actually started the modern public system of Great Britain which, to-day, is by far the most advanced in the world. Education by precept and example, a friendliness begotten of love and a genuine belief in real equality, of deep respect for those that are being taught, of an utter absence of the arrogance and contemptuous superiority of the "lady bountiful," of a levelling of oneself down to meet the levelling up of him who is to be benefited— these are a few of the ways that have effected miracles in the art of living, and have justified and will continue to justify the existence of the church in the eyes of the world. No one ever essays a more delicate task, or one more fraught with consequences either sweet or bitter beyond words, than he who goes down among his fellows, less instructed and less fortunate, but no less deserving than himself, to teach and cultivate. And yet, how lightly is this task undertaken, and by what multitudes! To you who know, the very word "uninstructed" bears a double significance. It does not relate solely or exclusively to him who lives in a two- or three-roomed apartment, for out of these very apartments come the saviors and regenerators of society—the artist in color, in form and in words. There is an uninstruction of the heart as well as of the head, an uninstruction in tact, in motive, in bearing, in demeanor, and this is as often found under silk as under blue jeans. I am far from drawing upon my imagination in these sentiments. We have only to look upon modern civilization to see the baneful result of this uninstructedness. The bitterness of poverty, the lofty and patronizing compassion of wealth—the absolute cocksuredness of the latter in its methods, and the sullen and instinctive self-respecting resistance of the former to be dragooned into an artificial uplift, are the consequences of an uninstructedness, not more pronounced or inimical on the one side, than upon the other.

You will notice that the burden of my song is still poverty and that I do not seem able to get away from it. The more familiar I become with the subject matter of this poor sketch, the more it is borne in upon me that nine-tenths of the misery and wretchedness, and an even greater proportion of the crime that is exposed and punished by law, arise from the awful inequality of the distribution of wealth. Poverty and wealth are both age-long conditions, but the tremendous advantage secured by wealth over poverty in the art of living is a very modern phenomenon, and carries with it the acutest and most deadly peril to our present system. To bridge the ever-widening chasm between the two classes safely is, I am convinced, the function of the church alone, as things now obtain. No other organization can do it, indeed none other is fitted to do it—and, I repeat, I mean by the church—its clergy. They have done so in past ages and, if I am an enthusiast in anything, it is in the belief that to the preachers and teachers of purity and good-will the world must alone look, if it is to escape a convulsion compared with which the present military horror is but as a "tempest in a teapot."

I have left myself but little time, and you, I fear, but little patience to dwell upon the many activities of public health work, apart, in a formal way, from insanitary living. There are many directions from which disease and death may come, from which scarcely any care taken by the individual can protect him. Adulterated food, impure water, sophisticated milk, contagious disease, quack medicines, his neighbor's nuisance, noxious trades—these are a few of the things to which the individual must look almost exclusively to the health authority to be protected from, and it is along these lines and similar ones that preventive medicine has won its very greatest triumphs. The public in general have little or no notion of the dangers that are constantly being removed from their path all over the Western world. The

frightful ravages of Asiatic cholera, of plague, of smallpox, of yellow and malarial fevers, of diphtheria, of typhoid, of scarlet fever, and a host of other contagions, have been, in some instances, almost banished from our civilization. This great achievement is almost wholly due to the science and art of preventive medicine, and there is not a man listening to me that, even during the past year, has not been under infinite obligations to that science for whatever measure of health he and his family and his neighbors enjoy. Contrary to the principle with which I set out, let me give you a few concrete examples of what preventive medicine has done, first, among far away and very large communities, and then, perhaps, a modest, a very modest, word or two of its triumphs right around you in your own homes and in your own city. Not to go further back than fifteen years, that is to say, to the beginning of the present century, the death rate of New York was some twenty per thousand of the population per year. It is now about fourteen. Stated in this bald way it is, perhaps, not very striking. But it is an easy thing to clothe this statement with its appropriate dress. The population, at present, of that great city is some 5,500,000, so that if the death rate of 1900 had been effective in 1915, no less than 33,000 more people would have died in 1915 than did actually die. That is to say, to put it into a still more concrete form, a number about equal to two-thirds the entire population of this city is being saved annually from death in New York, as compared with a few years ago. Now, no miracle has occurred there. The climate is the same as ever. The intercommunion and commerce of the people among themselves and with outsiders is even greater than before. The people are just as susceptible to disease and death, in a general way, as ever they were. No patent remedy has been discovered to rescue them once they are laid on their back by sickness. Nothing else than attention to the well-understood principles of the science of preventive medicine put into practice by a most generous expenditure of money, wisely and discreetly disbursed, by labor, and precise knowledge has wrought this result, a result which almost staggers belief, accomplished in so short a time. Again, a few years ago, in that city to which I referred in the opening part of this paper, it was the usual thing each year to have such a prevalence of typhoid that the mortality from that disease averaged something like twenty-five or thirty, or even more (I speak from memory) per 100,000 of the population per year. Last year that mortality was only a fraction of one per 100,000, the lowest, if I am not mistaken, of any considerable city in the United States, Canada or Great Britain.

But "distance lends enchantment to the view," and "far-off fields are green," you will tell me, therefore let me mention just one or two similar items with respect to our own community. Some little time prior to the opening of the present century the death rate in this city was estimated by the late Dr. Bayard at twenty-two per thousand per year of the population. At present it averages about seventeen on my own estimate of the population, and about fifteen if based upon the directory estimate of last year. Taking the larger figure, seventeen, that means that had the death rate of twenty-two been effective last year, some 200 persons that are alive in this city to-day would have been buried in 1915. Again, in 1914, despite the fact that diphtheria had been unusually prevalent over almost all of Eastern Canada, our deaths from that disease were but five, a number six times smaller per head than occurred in one of the principal cities of this Dominion in 1914, and among the very smallest of any considerable city in Northeastern America. This same remark applies to scarlet fever, only in a far more pronounced degree and in the way of a more moderate reduction as respects infantile mortality and typhoid fever in the year last past. These results, notwithstanding remarks sometimes made to the contrary, do not come by chance, or are merely instances of good luck. Nothing, if left to itself is more constant and more unaffected by sudden change than causes of death in any large community, from year to year, and nothing but unremitting and intelligent attention, also from year to year, will serve to reduce them.

There are many other points, both as regards this community and nearly every other large one in our Western world, that might be adduced to display the efficiency of preventive medicine, but some of them are not susceptible of proof by figures, and I have already intruded upon you too long. But, after all, we were to dwell upon this matter at interminable length, we would have to acknowledge that the science and art of preventive medicine is still in its infancy. Its greatest triumphs are in the future, and could wealth be more evenly distributed, although disease, decay and death would still remain, they would, with equal step, approach each man's door, and that with less frequency, less horror, and less untimeliness.

Canadian Public Health Association

Office of the General Secretary,
University of Toronto.
Toronto, July 16, 1917.

The sixth annual congress of the Canadian Public Health Association is to be held in Ottawa, on September 27 and 28, next. The Canadian Association for the Prevention of Tuberculosis will meet at the same place, on September 26. Furthermore, the Canadian Conference on Charities and Correction, meets in Ottawa also, during the early part of the same week.

This preliminary announcement is intended to arouse your interest and to invite your attendance at the meeting. The C.P.H.A. will discuss two or three very important questions. The subject of National Health Insurance will for the first time in Canada be adequately dealt with. Foremost authorities on the continent will participate in the symposium on this subject, which will take place on the first afternoon.

Further, venereal diseases in their military and civilian public health aspects are to be dealt with. This is a subject of the utmost importance. The questions of infant welfare, child hygiene, etc., are also to receive attention. A separate section meeting of laboratory workers is also being arranged.

Special railway rates from all points east of Fort William, have been obtained from the Eastern Canadian Passenger Association, fare and one-third, plus 25 cents on the certificate plan.

Please mark these dates, September 27 and 28, on your desk calendar pad—arrange to be in Ottawa and attend these meetings. Let the public health workers in Canada show by the size of their sixth annual meeting, and the importance of their contributions, that they are second to none in their interest in the welfare work of the Dominion of Canada.

Those who wish to contribute papers should submit titles and also the length of time required to read the paper, to the general secretary, not later than August 15, next.

Full program and announcements will be mailed before September 1.

May we count at least on your being present? Canada was never in greater need of unity in regard to public health matters. Faithfully yours,

J. G. FITZGERALD,
General Secretary.

The Sanitary Inspectors' Association of Western Canada

Vital Statistics

By John Martin

Assoc. Royal San. Inst., Sanitary Inspector, Regina, Sask.

Third Prize Essay

IT is with some hesitation that I attempt to write on this subject and would state at the outset that what I am about to say must be taken, not as the words of an authority, but as the result of such experience as may be gained by a sanitary inspector, who, amongst other duties, has had allotted to him, the work connected with the registration of births, marriages and deaths and the compilation of statistics relating to them, in the hope that it may be of mutual benefit.

I trust that I may be able to present this somewhat "dry" subject in a more or less interesting manner.

What are vital statistics? We have been told that "vital statistics are the bookkeeping of humanity."

They form the ledger of life and death in a community. According to the manner in which this ledger is posted, so does each community know its standing in matters of life and death.

If the books are badly kept, the community has but a hazy conception of its physical progress.

Do vital statistics concern health authorities, and should such authorities have some measure of control of these statistics?

Undoubtedly, yes. Why? Someone has said that, "Public hygiene is built upon, directed by, and everlastingly indebted to vital statistics."

A minute's consideration will show how true this is.

With prompt access to vital statistics, health authorities can see in the birth and death rates the results of their work.

As the causes of death are recorded and made known, health officials see where to concentrate their efforts in attacking the diseases causing death.

High death rates in congested areas, an excessive number of deaths from some infectious disease, increased infantile mortality, a decline in birth rates, all point the way to effort on the part of the sanitary inspector in dealing with overcrowding and its attendant evils, to the contagious disease inspector in ferreting out and controlling the source of infection, to the child welfare nurse in visits to infants and to those as yet unborn, to the social worker in dealing with economic problems.

Conversely, decreased death rates show that public health work has not been in vain, and creates a pardonable amount of self-satisfaction, without, in any way, causing the authorities to rest awhile; rather should efforts be renewed to still further improve conditions and reduce mortality.

Statistics of births, marriages and deaths, while often given in numbers, are more usually expressed in "rates," mostly, but not always, as so much per 1,000 of the population.

It will readily be seen, that for these rates to be accurate, not only must every birth, marriage and death be registered,

but a reliable estimate of the population is essential.

The population of a country is usually calculated by census.

In the United Kingdom, such census is taken every 10 years, in Western Canada, every 5 years.

With a floating population such as we have in Canada, it is obvious that the population does not remain constant from one census to another. How, then, are we to obtain anything like an accurate estimate of the population on which to base our rates for a specified period?

In the United Kingdom, three methods are adopted:

1. By logarithms.
2. From the number of inhabited houses.
3. From the birth rate.

In addition to these methods, we may have estimates by the assessor, the city clerk, the police, and other officers.

Each community has its own method of calculating its population.

I have neither the time nor the ability in this paper, nor do I think it comes within the purview of a sanitary inspector, to go fully into the working of these methods. A sanitary inspector is not expected to make a census, but he should certainly be able to understand and analyze any vital statistics that may be placed before him. Suffice it to say, that practically all methods are based on calculation and on the assumption that conditions remain approximately the same during similar periods covered by given statistics, that is, that the rate of increase or decrease in population and so on, remains the same.

It should be borne in mind, however, that the rate of increase does not remain the same, year after year.

Each year, increasing numbers reach marriageable age and, becoming parents, add to the population.

It will therefore be seen, that not only does the population increase each year, but the rate of increase also becomes larger each year. It resembles money deposited at compound interest, which increases year after year at a much more rapid rate than if it were deposited merely at simple interest.

It is in this respect and in the absence of definite data as to population, that the use of logarithms is valuable and may be considered fairly accurate. If I appear to have gone to a tedious length in regard to estimates of population, my excuse is that it is really most important, being the basis of almost all calculations in vital statistics.

Before explaining the methods used in the calculation of rates, I might mention, as I intend taking Regina figures as examples, and in view of the uncertainty created by the publication of the figures of the last Dominion census, that I am basing my calculations on a population of 40,000, which is the figure used by the Provincial Department in compiling Regina statistics.

In Saskatchewan, births must be registered within one month of their occurrence. Obviously, to calculate the birth rate with any degree of accuracy, it is essential that every birth be registered; unfortunately, at present, this is not done, although good progress is being made toward this end.

Why is it so important that every birth and death be registered?

A recent article in the Public Service Monthly gives a very good answer to this question:

1. To the individual:

"It insures to every citizen a record of certain events in his or her life.

"It settles the right to the elective franchise.

"It guarantees proper identity in legal questions.

"Inheritances, legacies, life insurance claims, pensions, etc., are all dependent upon legal proof of birth.

"Owing to lack of registration, in many instances persons have suffered personal loss."

2. To society:

"It gives a stable basis for health work."

3. To the Government:

"It furnishes the details for an inventory by the Government; no business can be carried on successfully without an annual stocktaking.

"It supplements the census report by

giving actual natural increase in population.

"It provides data for framing legislation on various questions, such as sanitation, communicable diseases, economics, etc."

I will now endeavor to explain the meaning of birth rates.

The birth rate is the number of births per 1,000, of the whole population. It may be given as an annual, quarterly, monthly or weekly rate. The annual rate is the proportion per 1,000 of the mean annual population. As previously mentioned, this figure for Regina is taken at 40,000. In 1916, there were registered in round figures, 1,200 births. Finding the annual birth rate, therefore, is merely a matter of simple proportion:

$$40{,}000 : 1{,}000 :: 1{,}200$$

or

$$\frac{1{,}000 \times 1{,}200}{40{,}000} = 30 \text{ per } 1{,}000$$

In calculating this rate at shorter intervals, say, monthly or weekly, we do not simply divide the annual rate by 12 or 52 as the case may be, but we calculate the rates on what is known as the monthly or weekly population. This is found by dividing the total annual population by the number of days in the year—365.24, which gives a daily population of 109.5.

The weekly population is then found by multiplying this figure by 7 and the monthly population by multiplying by 28, 30 or 31, according to the number of days in the month required.

For instance, to find the monthly birth rate of, say, April—

109.5 x 30 equals 3,285

Births registered were 100

The monthly birth rate is therefore

$$\frac{100 \times 1{,}000}{3{,}285} = 30.4 \text{ per } 1{,}000$$

Or a weekly rate:

$$\frac{25 \times 1{,}000}{766.5} = 32.6 \text{ per } 1{,}000$$

The birth rate varies throughout a country.

In urban and manufacturing centres, it is higher; in rural and agricultural districts it is lower. In times of peace and prosperity it is higher; in times of war it decreases.

Among the poor and laboring classes, it is higher, while among the rich and intellectual classes—by which no slur is intended on the laboring class—it is lower. In the case of the latter, this may be accounted for by the later date of marriage and probably also to an avoidance of child-bearing.

Illegitimate births are generally stated as a proportion of total births. A more accurate method would be to state such births as a proportion per 1,000 unmarried women, and legitimate births as a proportion per 1,000 married women of child-bearing ages.

Some difficulty, however, would be met in getting an accurate estimate of such as a working basis.

Still-births are registered in the same manner as normal births, but are not included in vital statistics rates.

Death rates—In Saskatchewan, deaths must be properly registered before burial.

Registration is generally made on the certificate of a medical man or the coroner, but the Registrar may, in certain cases, where no doctor was in attendance, register the death on the information of some person present at time of death or during the fatal illness. When the death is recorded, the registrar issues a burial permit, without which, no interment may be made.

This precludes the possibility of the burial of any person who may have died in suspicious circumstances or from violence.

The Vital Statistics Act requires the registrar to make returns to the medical health officer of all births and deaths in his district.

From these returns, the various rates are calculated.

In the cities in Saskatchewan, the registrar is usually the M.H.O., which makes such returns unnecessary and greatly facilitates reference to these important statistics by the health department.

The crude death rate, is the number of deaths per annum from all causes, per 1,000 of total population at all ages.

For example, in Regina in 1916, there

were registered in all, 424 deaths; therefore the crude death rate for 1916, is

$$\frac{424 \times 1{,}000}{40{,}000} = 10.6 \text{ per } 1{,}000$$

The corrected death rate, is the crude death rate after deducting the deaths of non-residents in hospitals and other institutions.

Obviously, to be quite fair, and as accurate as possible, the deaths of residents occurring out of the city should, on the other hand be included.

To be more accurate still, the same consideration should be given to the figures of population on which such rates are calculated; this means that the number of non-residents should be deducted and the number of residents out of the city should be included.

Easier said than done? True.

Can it be done? No. At least, not with reasonable accuracy.

By mutual arrangement with other medical health officers and registrars, it may be possible to get a fairly close return of deaths of native residents; it may also be possible to make a fair estimate of the number to be subtracted from the population, but it is almost impossible to estimate the number to be added thereto.

As a matter of fact, such figures, in many cases, would make no appreciable difference to the rate, and in small towns may be generally disregarded altogether.

On the other hand, a city which has the only hospital accommodation in a wide radius, may appear to have a very high death-rate if some attention were not paid to these figures.

However, to give some idea of how it affects our own city, I may say that the net number of deaths of residents in 1916 was 292; we will say the net resident population was 39,000 which is conservative, as the higher the population the lower is the death-rate.

Our corrected death rate is therefore,

$$39{,}000 : 1{,}000 :: 292$$

or

$$\frac{1{,}000 \times 292}{39{,}000} = 7.5 \text{ per } 1{,}000$$

which looks much better than the crude

Comparison of Death Rates in Several Towns or Districts

Occasionally it is desired to find the death rates of several towns or districts and state them as one, as for instance, the death rate of cities compared with that of rural municipalities.

In such cases, it is not correct to lump together the death rates of the various cities, divide the total by the number of cities and state the resulting average figure as the death rate of such cities.

The correct method is to add the total populations and the total deaths of the cities and with the two sums, the combined death rate is calculated in the manner already shown.

It should be borne in mind, however, that a comparison of the death rates of different cities, towns or districts is not always a fair index of the relative healthiness or sanitation of such towns or districts.

One may be an old settled district with a large percentage of elderly inhabitants, the other may be largely populated by young people; or one may be more or less a fashionable residential town and the other a manufacturing town, densely populated.

In such instances, comparisons of death rates should be made with some reserve, as the factors governing such rates are entirely different.

One might compare Montreal with Banff, Chicago with Colorado Springs, or Birmingham with Leamington, and jump to some false conclusions if the characteristics of each locality were forgotten.

In such comparisons one must consider:

1. The respective age distribution of the population.
2. The respective sex distribution of the population.
3. The respective industries of the population.
4. The respective climates and locations.

Special Death Rates

These cover such items as mortality at different ages, infantile mortality, disease death rates, zymotic death rates, occupational mortality, etc.

As time and space are limited, I shall

Has it ever occurred to you why a Life Insurance Company charges for the same policy a higher premium the older you are at the time you take out such policy?

It is because your chances of living a certain number of years are less, the older you get.

How can the company estimate the probable length of your life?

Vital statistics give them the information.

The company's actuaries have made a long and close study, over a long period of time, of the ages at which people die, the causes from which they die, and the occupations at which they are most likely to die, and have based thereon, their tables of charges and benefits.

Insurance companies know more than most people about special death rates because it is their business to do so.

When you hear of insurance companies boosting public health measures and employing visiting nurses, you know it is a business proposition with them; incidentally, the public health is benefited, for which we, as health officials, should, at least be grateful.

They know that improved public health reduces death rates and consequently their own financial risks.

These companies will tell you that the average duration of life has increased by about 10 years during the past half century.

On the American continent and in most of the countries of Europe, all deaths are classified, as to age, sex and cause of death, under what is known as the international list of causes of death.

This standardization, as it were, is most commendable and greatly facilitates comparison on account of its uniformity.

The full classification contains 14 general headings, under which are classified some 189 common causes of death; these cover about 1,500 terms which might be employed by medical men in certificates of death, and it is in this respect that a standardized list is most useful, as without it, the same stated cause of death may be classified differently in various cities or localities, with the result that accurate comparison is not possible.

From such a classification, it is easy to calculate any required special death rate.

Mortality at different ages is rated at per 1,000 and is merely a proportion of total deaths between any stated ages to the total number of persons living—not at all ages—but only between the same stated ages. It is here that an accurate census is essential.

Infantile mortality is calculated, not as a rate on the whole population, but as a proportion of deaths under the age of 1 year to each 1,000 births in the same year. This again draws attention to the necessity of each birth being promptly registered.

Obviously, the fewer births registered, the higher does the infantile mortality rate appear.

Infantile mortality rate for 1916 with a total of 1,200 births and 132 deaths at the age of 1 year and under would be

$$1{,}200 : 1{,}000 :: 132$$

or

$$\frac{1{,}000 \times 132}{1{,}200} = 110$$

While this figure is not by any means excessive, it is in all probability higher than it actually should be, for the simple reason that all births are not registered.

These infantile deaths may be analyzed into the various causes of death and expressed as a rate per 1,000 births or as a percentage of the total deaths of infants from all causes.

Nowadays, infantile mortality looms largely in public health work, with the result that very few places of any importance are without a child welfare division with one or more trained nurses, whose duty it is to visit homes, render assistance and give advice where necessary, not only to mothers and infants, but also to expectant mothers. The result is almost invariably a considerably reduced infantile mortality rate.

Disease death rates may be stated as a proportion of any figure from 1,000 to 1,000,000; it is merely a matter of moving the decimal point. Such rates, however, are usually expressed as so much per 100,000 population; this avoids the use of small and confusing fractions which generally occur in rates per 1,000, and also

the somewhat cumbersome and sometimes startling figures of a rate per 1,000,000.

Obviously, in disease death rates, each disease is treated separately. To be strictly accurate, the deaths from each disease would be given under age groups per 100,000 living in each respective age group; this, however, becomes rather involved and in a small community, is unnecessary.

Note should be made of the difference between a disease death rate and a disease mortality rate. The former, as already mentioned, is a rate per 100,000 population of deaths from any particular disease; the latter is a percentage of deaths in the number of cases reported of that particular disease.

For example, in Regina in 1916, there were 12 deaths from typhoid fever.

The typhoid death rate per 100,000 is therefore

$$\frac{100{,}000 \times 12}{40{,}000} = 30 \text{ per } 100{,}000$$

The typhoid mortality rate in a total of 53 cases reported is 22.6 per cent. which is somewhat high, the average mortality being only 10 per cent.

These figures, however, include non-residents brought in to the city for treatment, and also cases which were proven to have originated outside the city. They are therefore called gross rates and cannot fairly be considered as the proper rates for the city.

Deducting such cases, there were 25 city cases of typhoid fever with two deaths; the net or corrected rates are therefore:

$$\text{Death rate: } \frac{100{,}000 \times 2}{40{,}000} = 5 \text{ per } 100{,}000$$

$$\text{Mortality: } \frac{100 \times 2}{25} = 8 \text{ per cent.}$$

The same method is applied to all or any diseases of which a rate is required.

The zymotic death rate is that of the principal contagious diseases, such as typhoid fever, smallpox, scarlet fever, etc.

Usually phthisis or pulmonary tuberculosis is not included in such rates, but is expressed as a phthisis rate separately.

For example, in Regina in 1916, the total deaths from zymotic diseases excluding tuberculosis, were 52.

The zymotic death rates per 100,000 is therefore

$$\frac{100{,}000 \times 52}{40{,}000} = 130 \text{ per } 100{,}000\text{—gross rate}$$

The net rate, deducting imported cases is:

$$\frac{100{,}000 \times 34}{40{,}000} = 85 \text{ per } 100{,}000$$

Occupational mortality, as is apparent from its title, deals with the deaths arising from various trades and occupations —hazardous and otherwise. You have all, doubtless, seen tables of such mortality, and as the subject is too lengthy for treatment here, and is one with which you are already probably acquainted, I do not propose to deal with it now, and have merely mentioned it to remind you of its important position in vital statistics.

Attack rate, case rate, or morbidity. As a comparison with infectious disease death rates, it is customary to give the corresponding attack rate or morbidity of each disease. As may be judged from the title, it is the proportion of the population attacked by any particular disease and is expressed in the same terms as the death rates.

Marriages. While these do not interest health officials so much as births and deaths, this paper would not be complete without a passing reference to them. The marriage rate is expressed as per 1,000 population. Sometimes the males and females marrying are stated separately as a rate per 1,000 of the male and female population respectively. Marriage statistics may further be dissected into age classifications, nationalities etc., such statistics frequently being stated as percentages of total marriages.

Charts. Vital statistics are often made more valuable and more easily understood by the use of charts. These should be as simple as possible, otherwise they confuse instead of assist. Such charts are made attractive by the use of colors.

One might pursue the subject of this paper to much greater length, if time and

ability permitted, but I think I have said enough to prove the truth of my assertion at the commencement, relative to the importance of vital statistics in public health work.

I trust I have been able to show clearly how the various rates are worked out, so that each of us, should any statistics be placed before us, will understand the meaning of such figures.

In conclusion, I would again state, that without accurate vital statistics, any public health department is working in the dark and is utterly unable to apply its energies in the direction of the greatest effectiveness.

MONTHLY JOTTINGS

By the time this meets the eye of the members, the annual meeting for 1917 will have been held. The president, Mr. Watson, and his committee, are exerting every effort to make the gathering a success. The Provincial Government of Saskatchewan have very kindly given consent to the sessions being held in the Legislative Buildings, and they are also assisting financially. A very attractive program has been arranged and members attending will surely have a most instructive and delightful time. We anticipate a fairly large attendance. The generosity of the Winnipeg City Council, in giving a grant of $100.00 to the Winnipeg staff has made it possible for five members to be sent from Winnipeg.

* * *

There may be other municipal councils who have followed the examples set by the Government of Saskatchewan and the City of Winnipeg. To all such bodies the sincere thanks of the Association are due. It is very gratifying to find them taking such an enlightened view of the importance to the community of such gatherings of sanitary inspectors. Any small sums thus expended will bear rich fruit in the increased efficiency of sanitary inspectors and the renewed energy induced by the knowledge that their efforts are appreciated as being both useful and beneficial to the community.

The annual reports of the executive and vice-presidents for the various provinces will be presented, also the financial statement.

* * *

Election of officers will be held.

There are no proposed amendments the constitution.

* * *

Any member not able to attend personally, may give his written proxy to any other member attending the sessions, or may entrust them to the secretary-treasurer, Mr. Officer, who will faithfully cast any proxies given to him in such a manner as the member may direct.

* * *

After the meeting is over, we would ask that every member of the Association give his earnest support to the newly elected executive, and do all in his power to further the interests of the Association.

We are quite a young society and the present membership although embracing nearly every sanitary inspector in Western Canada, is only a promise of what it shall yet be as regards importance and membership. No sanitary inspector can afford to remain outside of the organization. We hope that the Association will also take root in Eastern Canada.

* * *

During these times of stress no very great forward strides may be expected in public health work. Conservation is the order of the day. We, as an association, must conserve our members and maintain their interest in the affairs of the Association, trusting that after the war great things are in store for us. If we then desire to take steps looking for better recognition, both as to the status and remuneration of sanitary inspectors, we should be able to show a united front, and to demonstrate that we speak for all the sanitary inspectors of Western Canada. The duty of the individual member therefore, at present is to continue in active membership, and thus fit himself for aggresive action when the proper time comes.

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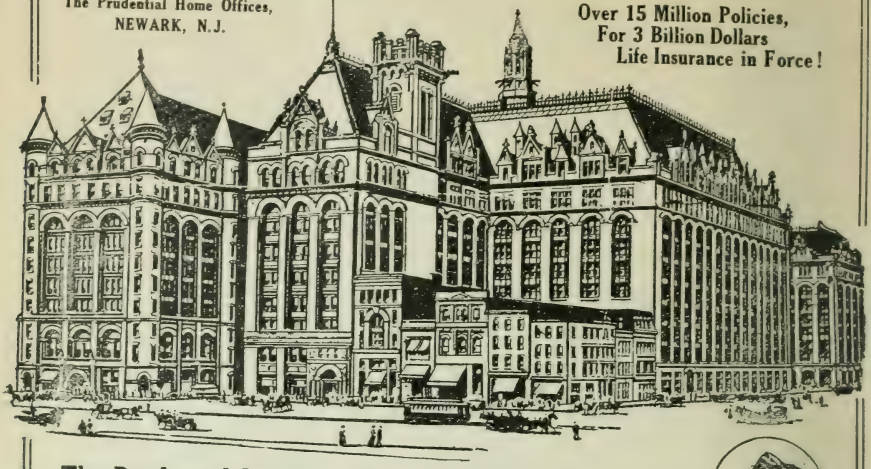

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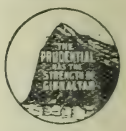

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The first two lessons of the Company's correspondence course will be sent to anyone interested. It will pay young men who desire to get on in the world to look into this.

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Head Office: Toronto, Can.

Are You to Have a Clean-up Campaign in Your City ?

If you are to have one

You should get in touch with the Metropolitan Representative in your city. He will be able and glad to help you.

If you are not to have one

You should organize one, it will do much to emphasize to your citizens the importance of cleanliness and right living.

Last year the Company co-operated in Clean-up Campaigns in 247 cities and towns and through its agents brought the Clean-up message into 1,500,000 homes during the days set aside for Clean-up. This year many more cities will be added to the list.

Your City Should Be One of the Number

Call on the Metropolitan representative for details or write to the Welfare Division.

Metropolitan Life Insurance Company

1 Madison Ave., New York City

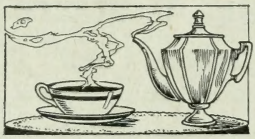
What's in a Name?

It is interesting sometimes to analyze the general public mind and to note how it is swayed by propaganda or even ordinary gossip.

Following this up, it is even more interesting to see how frequently propagandists and gossipers center their attacks on name rather than on actual faults or virtues.

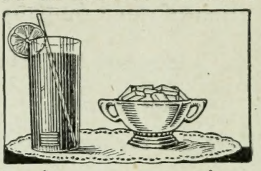
Here, for example, is a humorous situation.

Coffee, tea and Coca-Cola. Three beverages that derive their refreshing qualities from the same principle—caffeine.



For selfish purposes and through extensive use of printer's ink a systematic campaign has been directed against coffee and its caffeine content. That beverage has suffered but little in the aggregate—yet the attacks have been felt. Fostered by business maliciousness and by careless gossip Coca-Cola, as you know, has suffered occasional attack for its caffeine content.

Yet tea has escaped them all—and very rightly per se. But the interesting part of the whole thing is that the caffeine in Coca-Cola is



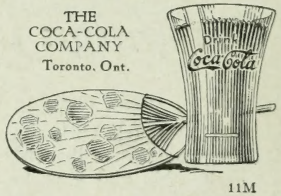
in reality a pure essence of tea—derived from it. And a glass of Coca-Cola contains less of this *essence* than a cup of tea. Must we not conclude then that attacks on Coca-Cola have their origin either in ignorance or self-interest.

Agreeing with us, as you must Doctor, we are certain this review will present the situation to you in a new light.

A Digest

of the authoritative facts and figures relating to the composition and dietetic value of Coca-Cola will be sent on request.

THE
COCA-COLA
COMPANY
Toronto, Ont.



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